SOCIAL SCIENCES

DETROIT PUBLIC LIBRARY JUN 2 0 1961

May, 1961

Volume Twenty

Number Five

URBAN LAND

NEWS AND TRENDS . . .

IN CITY DEVELOPMENT

PUBLISHED BY URBAN LAND INSTITUTE

STANDARDS FOR NEW URBAN DEVELOPMENT— THE DENVER BACKGROUND

By George Nez

Director, Inter-County Regional Planning Commission, Denver, Colorado

Editor's Note

One of the most intelligent approaches we have seen to the organization of criteria for new urban development has been formulated by the Inter-County Regional Planning Commission serving the Denver, Colorado, area. Our purpose in publishing the following article is to present the *method* used in organizing the elements and general criteria to be considered by the community and the developer, rather than a set of individual standards or "specifications" that are not necessarily applicable to other urban areas. For instance, criteria for "per capita domestic water supply" undoubtedly reflect a higher degree of lawn and garden irrigation than is required in most urban areas. Again, one might question the roadway widths specified. In any event, we suggest that both the land developer and the municipal planning agency will find the *procedure* outlined here of real practical value if adapted to the requirements and customs of their own locality. Here at least is a source for comparison with other standards for preparing similar development criteria in other areas of the country.

George Nez, who prepared this artcle, supervised the development of this quantitative approach to planning and has served as Director for both the City of Denver and the Inter-County Regional Planning Commission since 1955.

Our subdivision boom has produced its share of planning mistakes, lopsided developments, fields of new houses without adequate school sites or parks or even sites for fire stations, churches, libraries, highways, water and sewer facilities. Some of the blame lies with metropolitan planning agencies for being unready with practical advance plans and standards. Without these tools, urban growth can go on making serious planning errors.

In Metropolitan Denver, standards were needed as badly as plans. On the busy development level, where hundreds of private and public individuals help to cast the die of the future metropolis, we were getting, by planning default, all the problems of undersupply of public sites, mislocation, delayed and undersized public facilities, duplication and so on.

On closer look, we find a picture of some 220 local cities, counties, and districts all looking out for their own sites and facilities in a near vacuum of overall planning. Our counties of course came up with the regulatory tools, subdivision control and zoning, as fast as planning boards could work. They also ventured into public site reservation. Some set up a five per cent public site donation requirement in new subdivisions, some eight. The City of Denver started with an eight per cent public site donation rule in new annexations, and raised it to twelve. School and park districts are getting into the act more and more. There is even a procedure for equivalent cash value donation in case the school or park sites are not feasible in a subdivision. So our local governments find themselves in a "land office" business both in regulation of private development and in reservation of public sites.

But their official plans and standards are just catching up with the tide. When the Inter-County Regional Planning Commission came upon this scene of tumultuous development, it rushed out a general plan and started to review all large developments. At that point it ran headlong into the need for a practicable set of reference standards. The Commission now has the equipment: a set of ten year metropolitan stage plans and a set of reference standards. Large development plans anywhere in the five county area, and boundary area plans large and small are referred to the Commission by member counties, cities, districts. A Development Review Board composed of specialists from private building and public facility engineering reviews these development plans in the light of their experience and in reference to regional plans and standards.

The Standards

The plans and standards are designed for ready reference by both public and private planners and are intended particularly to enlarge the scope and accuracy of large subdivision planning. The object is to get a developer to lay out his program for an adequate area, whether he owns all or only part, so

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Plan-itorial . . .

Urban Problems in Hong Kong

Ours is the generation of homeless peoples. The meaning of that statement is easily understood throughout Europe and even in the United States—both have had refugee problems. Nowhere though has the statement had the significance as in the area of the Orient known as Hong Kong—the gateway to Red China. For years a continuous stream of Chinese has flowed into Hong Kong, families whose fear of loss of freedom exceeded that of the danger and privations of escape from Communist tyranny. No one knows how many have realized freedom through this route. Six hundred thousand are estimated to be in Hong Kong now. They come and go. The escape is usually from the sea; the land adjacent on the Kowloon Peninsula is well guarded and fenced.

Refugee Housing

The refugee problem in Hong Kong is a serious one, no phase of it more serious than that of housing. How does any community handle such a problem? Hong Kong has tried to solve it by first allowing the refugees to find temporary accommodations in cracker box shacks which have been built by hand in the surrounding hills, then providing one-story, barrack-like frame structures, with open courts between, each of which will house several hundred families. This type of accommodation has progressed to where in one section of Kowloon twenty-eight blocks of such buildings are contained within one square mile and accommodate in excess of 66,000 persons. This is really an intensive use of land for housing purposes.

Rooms in each of these structures lead from an open balcony. Every family is assigned one room, 9 x 9, and this accommodates the family regardless of its size. On each floor are common lavatories, as well as common kitchen facilities. However most families cook their meals in their one room on a charcoal grill. Washing is done every day on the balconies or in the rooms and the clothes hung up to dry on bamboo poles projecting from the balconies. It makes a colorful but pathetic spectacle. This generally is the type of program that is being provided to care for these unfortunate Chinese in order to get them out of the hovels that have been crudely erected in the hills.

The ground floors of these buildings are usually taken up by small merchants, who also live in the same room where their business is conducted. School rooms are provided on the top of the buildings. Open markets are often in the open spaces between these buildings.

A small rent is charged, about $2.50 a month per family.

They keep their bodies clean in spite of sanitary problems. Children play on the balconies, in the open courts and streets, but aside from the normal accumulation of dirt from playing in such an environment, these children present a neat and clean appearance.

The family solidarity is evident at all times, helped no doubt by the fact that infants and small children are invariably strapped to the backs of their mothers and are with them in this fashion all day long if they are working or shopping. Children old enough to carry a baby in this manner also carry a child as the family increases.

These refugees are not outcasts in any sense. They are often people of education, culture and attainment, people who prefer to live temporarily or indefinitely in this manner to a higher standard of living under Communist domination.

They are not idle. They immediately get some kind of work in the area since there are between 5,000 and 6,000 manufactories, from heavy industry to the needle trades. Many find work on the roads due to an extensive road program under way which is designed to be done by hand labor in order to keep a maximum number employed.

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URBAN LAND

Vol. 20, No. 5 **May, 1961**

OFFICIAL PUBLICATION OF
URBAN LAND INSTITUTE
1200 18th St., N. W., Washington 6, D. C.
Single copies $1.00; 50¢ to U.L.I. Members.
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PHILIP W. KNISKERN

With deep regret, Urban Land Institute announces the death on Friday, May 19, of Philip W. Kniskern in a Philadelphia suburban hospital.

Mr. Kniskern served as president of ULI during 1951 and 1952. Under his leadership the Institute's financing and accounting methods were made sound. Since his presidency, he has served the Institute continuously as chairman of its Finance Committee and as a member of its Central Business District Council.

Mr. Kniskern was a widely known real estate appraiser, broker, and consultant. In addition to ULI, he headed three national real estate organizations: American Society of Real Estate Counselors; American Institute of Real Estate Appraisers; and National Association of Real Estate Boards. He was director emeritus of the First Federal Savings and Loan Association of New York. Recently, he had been a consultant on urban renewal programs.

STANDARDS FOR NEW URBAN DEVELOPMENT—THE DENVER BACKGROUND

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that preliminary plans are fairly complete in all their public facilities. This will be a good deal better for him than the old routine of trying out a "first filing" and having it revised over and over as it passes through all the bureaus which didn't have a large picture in front of them anyway.

In casting about for basic measurements, we found that we could not simply add up a lot of borrowed standards and expect them to fit local circumstances. At least fifteen different subjects had to be covered; standards had to mesh with each other; they had to vary with population density, community size, and distance from the core city; and unit costs were needed. Most of all, they had to fit the local environment. To meet these requirements we decided that it would be well worth gathering our local experts and working out our own garden variety of standards.

Initially, we checked basic standards around the country. Then we went into the distinctive characteristics of our development pattern and the objectives of our regional and local plans. Here are some of these environmental characteristics:

A good building table; plenty of land; a limited ground water supply; a tendency for widely scattered developments.

Low density housing preferences; an inviting climate; a new middle-income population; a homestead image of single family suburban housing; a shortage of good medium-density rental housing.

An automobile-based transportation system, with a high ratio of auto ownership and trip mileage per capita.

Urban development standards to fit this picture call for plenty of local judgments, and as a result the standards are tailor made. They could not be applied cold to other metropolitan areas, say on the east coast where the ecology and economy are quite different.

The Check-List

The following check-list shows the method and reference material used to prepare each standard:

A. **Age Distribution:** Estimates are based on U. S. Census Bureau information for the Denver metropolitan area, and information supplied by the Rocky Mountain School Study Council.

B. **Schools:** A compilation of many national standards plus local judgment and research of the Rocky Mountain School Study Council; consideration of publications of the U. S. Department of Health, Education and Welfare and standards of the National Council on School House Construction.

C. **Parks:** These standards were prepared locally. They are based on local judgment and study of both local and national standards such as the standards of the National Recreation Association and *A Guide for Planning Recreation Parks in California.*

D. **Water, Sewage Disposal, Storm Drainage:** Standards were derived from civil engineering texts and handbooks and modified to meet Denver area requirements.

E. **Highways and Streets:** These standards are a compromise of local practices and accepted national standards such as *A Policy on Arterial Highways in Urban Areas* by the American Association of State Highway Officials.

F. **Commercial Facilities:** The standards for commercial facilities are based on a compilation of many standards, local research, research of the Denver Planning Office, Urban Land Institute Technical Bulletins, plus recommendations of the ULI Community Builders' Council and leading market analysts.

G. **Fire Protection:** These are the recommended standards of the National Board of Fire Underwriters.

H. **Police Protection:** There are nationally accepted standards.

I. **Medical and Health Facilities:** These standards represent a compromise of local and national standards and practices.

J. **Libraries and Social Facilities:** These standards were prepared locally.

K. **Industrial Facilities:** These standards were prepared locally and are based on research of the Denver Planning Office and Denver Research Institute.

Particular credit should be given to Mr. Robert E. Leigh of the Commission staff for systematically organizing the standards and scaling the variables. The Development Review Board composed of specialists in engineering and development, furnished expert advice in various subjects covered by the standards. The Rocky Mountain School Study Council and the Denver Board of Water Commissioners in turn concentrated on their parts of the Standards.

We hope that planners and developers elsewhere will find interest in these comparative standards for advance measurement of quantities of space needed in the development of new urban areas.

BASIC STANDARDS FOR NEW URBAN DEVELOPMENT

I. ASSUMPTIONS

1. Average Family Size:
   (a) For purposes of *schools planning:* 4.4 persons per dwelling unit.
   (b) For purposes of *land use* and *public services and facilities planning:* 3.8 persons per dwelling unit.
2. Age Distribution of Population:

Age Group	Distribution in New Residential Subdivisions* (For Schools Planning)		Distribution in Established Residential Community		Distribution in a Metropolitan Region**	
	No. Per Dwelling Unit	Percent of Total Population	No. Per Dwelling Unit	Percent of Total Population	No. Per Dwelling Unit	Percent of Total Population
Pre-School	0.75	17.0	0.47	12.3	0.38	11.2
Kindergarten	0.15	3.4	0.09	2.4	0.07	2.1
Elementary School	0.85	19.3	0.52	13.7	0.41	12.0
Junior High School	0.25	5.7	0.20	5.3	0.17	5.0
Senior High School	0.23	5.2	0.19	5.0	0.16	4.7
Working Age	2.07	47.1	2.09	55.0	1.91	56.2
Retired (over 65)	0.10	2.3	0.24	6.3	0.30	8.8
	4.40		3.80		3.40	

* Estimates based on information supplied by Rocky Mountain School Study Council
** Estimates based on U. S. Census Bureau information

II. DEFINITIONS

1. *Neighborhood* — An area served by one elementary school, usually bounded by major or secondary streets, or other natural or artificial boundaries; population between 3,000 and 5,000 for average densities.
2. *Community* — Several neighborhoods, served by one high school which generally is bounded by major natural or man-made boundaries; population between 30,000 and 40,000.
3. *District/Region* — An area of two or more communities; 75,000 or more population.

III. SCHOOLS

School Type	Minimum Size (pupils)	Ideal Size (pupils)	Maximum Size (pupils)	Site Size (acres)	Radius of Area Served (miles)
Elementary	230	700	900	5 + 1 per 100 pupils	0.5
Junior High	750	1,000	1,500	15 + 1 per 100 pupils	1.0
Senior High	900	1,500	2,500	25 + 1 per 100 pupils	2.0
Elementary-Junior High Combination				15 + 1 per 100 pupils	1.0
Junior High-Senior High Combination				25 + 1 per 100 pupils	2.0
Elementary-Park Combination				8 + 1 per 100 pupils	0.5
Elementary-Junior High-Park Combination				20 + 1 per 100 pupils	1.0
Junior High-Senior High-Park Combination				18 + 1 per 100 pupils	1.0
Junior High-Park Combination				40 + 1 per 100 pupils	2.0
Senior High-Park Combination				35 + 1 per 100 pupils	2.0

IV. RECREATION

A. Standards for Recreational Activities

Type of Recreational Activity	Space Requirements for Activity Per Population	Ideal Size of Space Required for Activity	Recreational Area Wherein Activity May Be Located
Active Recreation			
1. Children's Play Area (with equipment)	0.5 acre/1,000 pop.	1 acre	Playgrounds-Neighborhood Parks Community Parks, School Playgrounds
2. Field Play Areas for Young Children	1.5 acres/1,000 pop.	3 acres	Playgrounds-Neighborhood Parks Community Parks
3. Older Children-Adult Field Sports Activities	1.5 acres/1,000 pop.	15 acres	Playfield-Community Park District Park
4. Tennis-Outdoor Basketball Other Court Sports	1.0 acres/5,000 pop.	2 acres	Playfield-Community Park
5. Swimming	1 outdoor pool/25,000	Competition size plus wading pool 2 acres	Playfield-Community Park
6. Major Boating Activities	100 acres/50,000	100 acres and over	District Park-Regional Park or Reservation
7. Hiking-Camping-Horseback Riding-Nature Study	10 acres/1,000 pop.	500-1,000 acres	Large District Park-Regional Park
8. Golfing	1-18 hole course per 50,000 pop.	120 acres	Community Park-District Park
Passive Recreation			
1. Picnicking	4 acres/1,000 pop.	varies	All parks
2. Passive Water Sports Fishing-Rowing-Canoeing	1 Lake or Lagoon per 25,000 pop.	20 acre water area	Community Park Special Regional Reservations
3. Zoos, Arboretums, Botanical Gardens	1 acre/1,000 pop.	100 acres	Large District Park or Special Facility
Other			
1. Parking at Recreational Areas	1 acre/1,000 pop.	varies	Playfields, Community, District & Regional Parks
2. Indoor Recreation Centers	1 acre/10,000 pop.	1-2 acres	Community Parks
3. Outdoor Theaters, Band Shells	1 acre/25,000 pop.	5 acres	District Parks

B. Standards for Recreation Areas

Type of Area	Acres Per 1000 Population	Size of Site Ideal	Size of Site Minimum	Radius of Area Served
Playgrounds	1.5	4 acres	2 acres	0.5 miles
Neighborhood Parks	2.0	10	5	0.5
Playfields	1.5	15	10	1.5
Community Parks	3.5	100	40	2.0
District Parks	2.0	200	100	3.0
Regional Parks and Reservations	15.0	500-1,000	varies	10.0

V. COMMERCIAL FACILITIES

A. Shopping Centers**

	Neighborhood Center*	Community Center*	Regional Center*
1. Major function	Sale of convenience goods and personal services	Some functions of the Neighborhood Center *plus* sale of shopping goods (wearing apparel, appliances, etc.)	Some functions of Community Center *plus* sale of general merchandise, apparel, furniture, etc.
2. Leading tenants	Super market and drug-store	Variety store and small dept. store	One or more large, major dept. stores
3. Location	Intersection of collector streets a/c secondary roads	Intersections of major roads and/or expressways	Intersections of expressways and/or freeways
4. Radius of service area	½ mile	2 miles	4 miles
5. Min. population to support center	4,000	35,000	150,000
6. Site area (gross land area)	4-8 acres	10-30 acres	40-100 acres and over
7. Desirable maximum size of center as percentage of total area served	1.25% (1 acre/1,000 pop.)	1.00% (0.75 acres/1,000 pop.)	0.50% (0.67 acres/1,000 pop.)
8. Ranges of Gross Floor Area	30,000-75,000 sq. ft.	100,000-250,000 sq. ft.	400,000-1,000,000 sq. ft.
9. Number of stores and shops	5-20	15-40	40-80
10. Parking requirements***	Parking ratio: 4 to 1 (Parking area is four times gross floor area of building; 400 sq. ft. per parking space)		
	200-600 spaces	1,000-3,000 spaces	4,000 spaces and over

* "A group of commercial establishments, planned, developed, owned, and managed as a *unit*, with off-street parking provided on the property (in direct ratio to the building area), and related in size (gross floor area) and type of shops to the trade area that the unit serves—generally in an outlying or suburban territory." Definition of the Community Builders Council, ULI.

** The Community Builders Council, ULI offers the following indicators for types and sizes in Shopping Centers (see Community Builders Handbook, Executive Edition, 1960, page 217).

Average Gross Leasable Area	50,000 sq. ft.	150,000 sq. ft.	400,000 sq. ft.
Ranges in GLA	30,000-100,000 sq. ft.	100,000-300,000 sq. ft.	300,000 to over 1,000,000 sq. ft.
Usual Minimum Site Area	4 acres	10 acres	30 acres
Minimum Support	7,500 to 40,000 people	40,000 to 150,000 people	100,000 or more people

*** The CBC recommends a parking ratio of 3 sq. ft. of parking area to 1 square foot of gross floor area be used for *planning* calculations only. For *operations* the parking index is more realistic (see Community Builders Handbook, Executive Edition, 1960, pages 300-305).

VI. INDUSTRIAL FACILITIES

1. Basic Relationships:
   - (a) Working Force as a percent of total population 35-40%
   - (b) Workers in industrial areas as percentage of total Working Force 30-35%
   - (c) Workers in Heavy Industry as percentage of workers in industrial areas 60-70%
   - (d) Workers in Light Industry as percentage of workers in industrial areas 30-40%
   - (e) Workers in basic industry (manufacture of goods for export from area) as percentage of theoretical community size 10%

2. Worker-Area Ratios:

	Average Number of Workers Per Gross Acre of Industrial Land		
	Heavy Industry	Light Industry	Industrial Park
Present Ratios	8	28	18
Expected Future Ratios	6	22	16

3. Land Requirement for Industry:
   - (a) Total Gross Land requirement for all Industry ..... 12 acres/1,000 popluation
   - (b) Land requirements for Light Industry ..... 2 acres/1,000 population
   - (c) Land requirements for Heavy Industry ..... 10 acres/1,000 population
   - (d) Land requirements for pre-planned industrial complex (Industrial Park):*
     - Minimum ..... 320 acres
     - Ideal ..... 640 acres
   - (e) Requirements for industrial land reserve:
     reserve land for *minimum of 50 years future growth*

4. General Requirements for Industrial Location:
   - (a) Fast, easy and convenient access to good transportation facilities including rail, highway and air.
   - (b) Reasonable location with respect to labor supply, raw materials source and markets.
   - (c) An adequate amount of suitable land, free from foundation and drainage problems with a sufficient reserve for future growth.
   - (d) An adequate and reliable supply of utilities: water, waste disposal, power and fuel.
   - (e) Protection from encroachment of residential or other land uses.
   - (f) Location so as to minimize obnoxious external effects on neighboring non-industrial land uses.

* For an analysis of industrial district characteristics see *Industrial Districts Restudied*, ULI Technical Bulletin No. 41, April, 1961.

VII. MEDICAL AND HEALTH FACILITIES

Type of Facility	Bed Requirement	Ideal Size	Population Served	Land Requirements	Location
Clinic (Outpatient)	——	——	10,000	1 acre	Neighborhood center
District or Outlying Hospital	4 beds/1,000 pop.	200 beds	50,000 to 75,000	15-20 acres	Near district center, with good transportation access.
Large and Specialty Hospitals	3 beds/1,000 pop.	500 beds	Metropolitan area	25 acres or more	Within special medical center area, preferable near medical school; good transportation service.

VIII. LIBRARIES (Branch or Suburban)

(a) Service radius: 1 to 2 miles.

(b) Population needed to support: 20,000 to 30,000 minimum.

(c) Minimum book stock: 20,000 volumes.

(d) Land requirements: at least one acre site.

(e) Location: near or adjacent to shopping centers.

IX. SOCIAL FACILITIES INCLUDING COMMERCIAL RECREATION

Facility	Population Required Per Facility	Land Area Required Per Facility
Churches	1,500	(1 acre, where parking is available) (2 acres, where additional parking is needed)
Restaurants	5,000	1½ to 2 acres including parking
Bowling Alleys	10,000	5 acres including parking
Drive-In Theatres	80,000 to 120,000	10 acres

X. TRANSPORTATION FACILITIES

Highway and Street Standards

Type of Facility	Function and Design Features	Spacing	Widths R.O.W.	Widths Pavement	Desirable Maximum Grades	Speed	Other Features
Freeways	Provide regional and metropolitan continuity and unity. Limited access; no grade crossings; no traffic stops.	Variable; related to regional pattern of population and industrial centers	200-300'	Varies; 12' per lane; 8-10' shoulders both sides of each roadway; 8'-60' median strip.	3%	60 mph	Depressed, at grade, or elevated. Preferably depressed through urban areas. Require intensive landscaping, service roads, or adequate rear lot building set-back lines (75') where service roads are not provided.
Expressways	Provide metropolitan and city continuity and unity. Limited access; some channelized grade crossings and signals at major intersections. Parking prohibited.	Variable; generally radial or circumferential	200-250'	Varies. 12' per lane; 8-10' shoulders; 8-30' median strip.	4%	50 mph	Generally at grade. Requires landscaping and service roads or adequate rear lot building set-back lines (75') where service roads are not provided.
Major Roads (Major Arterials)	Provide unity throughout contiguous urban area. Usually form boundaries for neighborhoods. Minor access control; channelized intersections; parking generally prohibited.	1½ to 2 miles	120-150'	84' maximum for 4 lanes, parking and median strip.	4%	35-45 mph	Require 5' wide detached sidewalks in urban areas, planting strips (5'-10' wide or more) and adequate building set-back lines (30') for buildings fronting on street; 60' for buildings backing on street.
Secondary Roads (Minor Arterials)	Main feeder streets. Signals where needed; stop signs on side streets. Occasionally form boundaries for neighborhoods.	¾ to 1 mile	80'	60'	5%	35-40 mph	Require 5' wide detached sidewalks, planting strips between sidewalks and curb 5' to 10' or more, and adequate building set-back lines (30').
Collector Streets	Main interior streets. Stop signs on side streets.	¼ to ½ mile	64'	44' (2-12' traffic lanes; 2-10' parking lanes)	5%	30 mph	Require at least 4' wide detached sidewalks; vertical curbs; planting strips are desriable; building set-back lines 30' from right of way.
Local Streets	Local service streets. Non-conducive to through traffic.	at blocks	50'	36' where street parking is permitted.	6%	25 mph	Sidewalks at least 4' in width for densities greater than 1 d.u./acre, and curbs and gutters.
Cul-de-sac	Street open at only one end, with provision for a turn-around at the other.	only wherever practical	50' (90'dia. turn-around)	30'-36' (75' turn-around)	5%		Should not have a length greater than 500 feet.

XI. PUBLIC WATER SUPPLY

1. General Requirements:

   (a) *Quantity*: Sufficient quantity for projected growth plus reserve for dry periods.

   (b) *Quality*: Meets United States Public Health standards.

   (c) *Treatment Facilities*: Adequate capacity to meet demands of maximum day plus fire flow.
   Provision for stage expansion.
   Adequate to insure degree of treatment needed.

   (d) *Distribution System*: Proper design to insure complete coverage of logical service area, and to assure delivery of required flow.
   Storage facilities where needed.
   Maintenance of minimum pressure of 40 psi everywhere in system.

2. Quantities of Water

Population Density[1]	Avg. Daily Water Use (gpcd)	Avg. Daily Water Use Acre-Ft.[2] per 1000 Pop.	Max. Daily Water Use[3] (gpcd)	Max. Daily Water Use Acre-Ft. per 1000 Pop.	Total Daily Water Requirements Per 100 Acres of Residential Development Avg. Day 1000 Gal.	Avg. Day Ac. Ft.	Max. Day[3] 1000 Gal.	Max. Day Ac. Ft.	Total Yearly Requirements Per 100 Acres of Residential Development 1,000,000 Gal.	Acre Feet	Total Yearly Requirements Per 100 Pop. Acre Feet
1. Less than 1 d.u./acre	300	0.92	900	2.76	57	0.18	171	.54	21	64	335
2. 1-2.9 d.u./acre	225	0.69	675	2.07	171	0.53	513	1.59	62	190	252
3. 3-4.9 d.u./acre	190	0.58	570	1.74	253	0.78	759	2.34	92	282	212
4. 5-15 d.u./acre	150	0.46	450	1.38	455	1.40	1365	4.20	166	512	168
5. Over 15 d.u./acre	125	0.38	375	1.14	950	2.92	2850	8.76	346	1065	139

[1] Assumes 3.8 persons per dwelling unit.
[2] One acre-foot equals 325,830 gallons.
[3] Maximum daily consumption equals 3 *times* average daily consumption.

XII. SEWAGE DISPOSAL

1. General Requirements:

   (a) Collection System: Proper design of interceptors, laterals, and trunks to insure complete coverage of logical service area.
   Maintenance of minimum gradient in lines; minimum velocity of 2 feet per second.
   Provision for sewage lift stations where required.
   Sewer laterals should be a minimum of 8 inches.
   Sewer pipe types: Under 24 inches—vitrified clay, asbestos cement, concrete or reinforced concrete.
   Over 24 inches—reinforced concrete or cast in place reinforced concrete.

   (b) Sewage Treatment System: Complete treatment required, preferable through consolidated area-wide system.
   Location away from residential or commercial districts.
   Plant layout and total space adapted for expansion.

2. Quantities of Sewage

   (a) Residential Areas:

Population Density	Max. Rate of Sewage Flow	Assumed Max. Ground Water Infiltration Rate	Max. Flow of Sewage Per 100 Acres of Residential Development	
1. 1-2.9 dwelling unit/acre	250 gpcd	1,000 gal/acre/day	290,000 gal/day	0.45 cfs
2. 3-4.9 dwelling unit/acre	250 gpcd	1,000 gal/acre/day	432,500 gal/day	0.67 cfs
3. 5-15 dwelling unit/acre	250 gpcd	1,000 gal/acre/day	860,000 gal/day	1.33 cfs
4. Over 15 dwelling unit/acre	250 gpcd	1,000 gal/acre/day	2,000,000 gal/day	3.09 cfs

   (b) Industrial and Commercial Areas: ..... 3,000 gal per acre per day

XIII. STORM DRAINAGE

1. General Requirements:

   (a) Provision of storm sewers where necessary with sizes capable of serving logical service area (drainage basin).

   (b) Adequate provision for handling storm waters originating in upper basin as well as lower basin.

   (c) Reasonable basis for assumed quantity of runoff from design storm (generally 5 year storm for storm sewer design; up to 100 years for open channel).

   (d) Preserve natural drainage courses where possible with adequate channel rights-of-way (generally flood plain of 50 year storm).

   (e) Prohibit storm drainage into active irrigation ditches.

XIV. ELECTRICITY, GAS AND TELEPHONE SERVICE

1. General Requirements:

   (a) Insure adequacy of coverage and capacity.

   (b) Encourage underground installation wherever possible.

XV. PROTECTION FACILITIES

A. POLICE PROTECTION

1. *Personnel*: 1.75 to 2.0 police personnel per 1,000 population.
2. *Stations* (Branch or Suburban):
   (a) Radius served: 2½ to 3 miles for average densities.
   (b) Land requirements: ½ to 1 acre site.
   (c) Location: near intersection of major traffic arteries.

B. FIRE PROTECTION

It is generally economically advantageous for any urban residential area to be in at least Class 8 of the 10-class category of the National Board of Fire Underwriters (NBFU). This class broadly requires that there be an adequate water *supply* and water *distribution* system and that the area be within the boundaries of a municipality or district affording fire protection.

STANDARDS (To achieve—Class 8 or lower):

1. *Water Supply*
   (a) System should be able to deliver at all times the required *fire flow* for a period up to 10 hours during a period of 5 days maximum consumption. NBFU recommends a fire flow for average cities given by the formula:
   $Q = 1020\sqrt{P}\ (1\text{-}0.01\sqrt{P})$ Where Q = flow in gallons per minute, and P = population in 1000's
   (b) Minimum *water main* size of 6".
   (c) Fire hydrants located within 500 feet of every structure, and no more than 1,000 feet apart.

2. *Fire Departments*
   (a) Paid Personnel:

Type of Station	Radius Served: High Value District	Radius Served: Standard Residential	No. of Men on Duty	Minimum Land Area Required	Location
Pumper & Hose Co.	¾ mile	1½ miles	4-5	½ acre	Wherever greatest flexibility can be obtained. Generally near the intersection of major traffic arteries.
Ladder Co.	1 mile	2 miles	5-6	½ to ¾ acre	
Pumper-Ladder Co.	1 mile	—	8-10	1 acre	

   (b) Volunteer:
   (1) Require at least one pumper and 1000 ft. of fire hose.
   (2) Must have regularly scheduled meetings and drills.

PLAN-ITORIAL

(*Continued from Page 2*)

Soaring Land Prices

There are other urban problems, however, besides those of refugee housing. This is a fast growing community. Usable urban land is scarce. Prices have been rapidly rising. Since the War the population has increased about five-fold. As a consequence of scarcity and general inflationary factors, real estate prices have tripled and in some instances soared to ten times those of the postwar period. Immediate postwar economic value seems to be higher in proportion to total project value when construction costs are relatively low.

This is the case here in comparison, of course, with the Western countries. It is not uncommon for industrial land on which light manufacturing buildings are erected to bring $20 a square foot or more. This is several times the going rate of industrial land in the average metropolitan city of America. Financing is difficult. Buildings are financed through short-term bank loans with interest rates in excess of Western countries' rates. Credit standing of the borrower is the most important consideration in lending.

Light manufacturing building is of the modern type and tends to be multi- and not one-story structures. Although housing in Oriental countries has been historically one-story, land scarcity is now causing vertical construction for all types of housing, including the most luxurious. High rise apartment houses are in vogue everywhere.

Although the economy temporarily seems to be at a standstill due to the difficulty of increasing exports, money for investment is piling up and is reflected in the price of local stocks and real estate. This excess capital for investment appears to be coming from wealthy Chinese who have been in other less stable areas of the world and now believe that Hong Kong is safe even though it is on the border of Red China and could be taken anytime if it seemed economically or politically desirable. A 12½ per cent maximum corporate or individual income tax is very attractive to capital.

Traffic congestion presents a serious problem. There seem to be no definite plans for its relief. As roads to the interior of the "new territories" are completed, it will probably be more acute. On the Island of Hong Kong modern ramp garages are being erected in the business section around the waterfront. The difficult topography puts a premium value on flat land near the bay.

While many of the problems seem to be similar to those in this country, they are dissimilar to such an extent that they are interesting, in fact, fascinating, particularly to one interested in urban growth and its consequent complexities.

BOYD T. BARNARD, *President*
Urban Land Institute

Editor's Note: On his trip to the Orient this winter, Mr. Barnard also wrote about his observations on problems created by urban growth in Tokyo. His remarks about Japan's traffic, housing, and real estate problems will be carried in an early issue of Urban Land.

METROPOLITAN GROWTH

Hans Blumenfeld, Consultant, Metropolitan Toronto Planning Board, has written to the Institute, "I have read with great interest your latest study of Metropolitan Area Growth in *Urban Land*. [February 1961 issue]. I was particularly intrigued by the last five lines of Table 3 which appear to indicate an answer to the hotly debated question at what point—if any—the economies of scale of a Metropolitan Area are outweighed by the diseconomies.

"As you point out, the data are not necessarily conclusive, because of the differences in general development between the 'Metropolitan Region' in the northeastern U. S. and the balance of the country. It has also occurred to me that some of the smaller 'Metropolitan Areas' adjacent to larger ones may owe most of their growth to the 'overspill' of the large ones. I have therefore regrouped five such pairs. [New York-N.E. N.J. plus Monmouth-Ocean Seashore; Philadelphia plus Wilmington; Miami plus Fort Lauderdale; Los Angeles plus San Bernardino-Riverside; and San Francisco-Oakland plus San Jose] It is significant that with this adjustment the difference in the growth rate between the smallest (250,000-500,000) and the largest (over 2 million) areas is reduced from 100 to 30 per cent.

Without debating whether the growth of these bordering areas results primarily from "spillover" or from satellite growth accelerated by the proximity of a larger metropolitan market area, we have reexamined all 77 major metropolitan areas for evidence of regional growth and have grouped nine cluster combinations of two or more metropolitan areas termed "regional metropolitan area" (abbreviated R.M.A.). As revealed in Table 3, revised, the eleven largest areas increased their population by 23 percent during the decade, while the 27 areas in the 250-500 thousand population group increased by 27 percent. Metropolitan areas in between, with populations of 500 thousand to 2 million each, grew most rapidly, increasing by 35 percent. It appears that regional location is more significant than population size in metropolitan growth.

The interaction in population growth of metropolitan areas near to each other will doubtless become more frequent as our national metropolitan growth continues. Mr. Blumenfeld has done us a favor by calling our attention to the fact that this process has already begun, and that some metropolitan area growth rates have been significantly affected by it.

J.P.P.

POPULATION GROWTH RATE AND METROPOLITAN AREA SIZE, UNITED STATES, 1950-1960

Metropolitan Area or Region # 1960 Population Size	Population (thousands) 1960	1950	Population Growth Percent
New York-Northeastern N.J.-S.W. Conn. R.M.A.	15,377	13,330	15%
Los Angeles R.M.A.	7,183	4,625	55%
Chicago-Northwestern Indiana	6,794	5,586	22%
Delaware Valley R.M.A.	4,928	4,129	19%
Detroit R.M.A.	3,935	3,151	25%
San Francisco Bay R.M.A.	3,426	2,531	35%
Boston R.M.A.	3,084	2,849	8%
Saint Louis	2,060	1,719	20%
Cleveland R.M.A.	2,014	1,614	25%
Pittsburgh †	2,007	1,833	9%
Washington	2,002	1,464	37%
11 Largest Areas, Total	52,811	42,832	23%
12 Next Areas (1-2 million)	14,548	10,801	35%
21 Next Areas (0.5-1 million)	13,906	10,296	35%
27 Next Areas (250-500 thousand)	9,463	7,444	27%
Total, 71 Major Areas and Regional Areas	90,728	71,373	27%

DEFINITIONS OF REGIONAL METROPOLITAN AREAS (R.M.A.s): NEW YORK-N.E. N.J.-S.W. CONN., New York-Northeastern New Jersey plus Monmouth-Ocean Seashore, N. J., Stamford, Conn. and Norwalk, Conn.; LOS ANGELES, plus San Bernardino-Riverside†; DELAWARE VALLEY, Philadelphia plus Trenton and Wilmington; DETROIT plus Ann Arbor, Mich.; SAN FRANCISCO BAY, San Francisco-Oakland plus San Jose; BOSTON plus Brockton, Lawrence-Haverhill, and Lowell, Mass.; CLEVELAND plus Lorain-Elyria, Ohio; Group 1-2 million includes PROVIDENCE R.M.A. (Providence plus Fall River, Mass.-R.I. and New Bedford, Mass.); MIAMI R.M.A. (Miami plus Fort Lauderdale, Fla.); Group 0.5-1 million includes HARTFORD R.M.A. (Hartford† plus New Britain, Conn.)

† Redefined area (see footnote after Table 6, Urban Land, Feb. 1961)

CONDOMINIUM HOUSING

Condominium as a term in the housing field is new to this country. Its recent emergence as a description for a type of housing accommodation comes about because it appears in the housing bill (S. 1448) now before Congress. In that connection condominium enters as an expansion of FHA insurance authority to include individual apartment units in commonly-used apartment facilities. (A new section 234.)

Condominium is an institution dating back to Rome in the 6th century, B.C., when the first legislation was passed permitting the construction of houses of communal ownership, but providing for individual ownership of a stated portion of land and property. Current legislation is based primarily on the same basic elements with certain adjustments made to modernize and to see that it fits the requirements of our present-day civilization.

Differences from Cooperatives

There are basic differences between the condominium and the cooperative system as it is known today in the U. S. Under the condominium concept, units, whether they be for residential, commercial or industrial use, are individually owned within the same building. Legal title to each individual unit is vested in an individual owner to the exclusion of any other person or entity. There is no tenant-landlord relationship as in a cooperative apartment building. The same type of title as is held in the case of a single-family house is held under the condominium system. In addition to an exclusive legal title to his apartment, each owner has a title in joint ownership with the other owners in a multi-family building to the common elements which make up the building—such as the land, stairs, roof, power system, lobby, bearing walls, etc. Rights of ownership to the common elements are fixed according to the value of each apartment and are inseparably attached thereto.

Rights of Ownership

Any change of ownership of the title to an apartment of necessity requires a change of ownership to the elements held in condominium. In a condominium, the rights of ownership are the same as those in a single-family residence and these rights may be exercised in exactly the same manner. The owner may sell his apartment at any price he chooses; he may rent, bequeath, mortgage or otherwise alienate

it independently from the intervention of any of the other apartment owners. For tax purposes each apartment is assessed independently.

Rights of Mortgaging

Each owner has an individual mortgage; and this mortgage can be paid off, refinanced, or otherwise held on a unit basis without any bearing whatsoever on the other apartments in the structure. The individual is responsible only for his apartment and is not responsible for the defaults in the obligations of others, nor is he responsible for the tax liabilities of other apartment holders.

Rights in the Deed

The relationship between the different owners is spelled out in the law of condominium and is governed by administrative regulations which become part of each deed. These regulations have the same desired purpose as the protective covenants in any single-family residential housing development. *Editor's Note: The condominium principle feasibly might be considered for horizontal housing, in addition to vertical housing. For example, condominiums might make possible the cluster type of site plan for residential projects. Use of the condominium principle might resolve the bothersome maintenance problem encountered in the common open space or park area of cluster plans.*

NEW PERCENTAGE LEASE BULLETIN AVAILABLE SOON

The National Institute of Real Estate Brokers announce publication of a new edition of their well-known PERCENTAGE LEASE BULLETIN, a standard reference. ULI's cooperation has been asked to help make the new edition as complete as possible. Special attention is being given to new business not appearing in previous editions. If you have data on leases in effect, that should be included in the Bulletin, please write the National Institute of Real Estate Brokers, 36 South Wabash Avenue, Chicago 3, Illinois, for the forms to provide the information.

NIREB will extend to ULI members a special price of $9.00 per copy for the new edition—regular price $12.00. To take advantage of the special price make your check *payable to* THE NATIONAL INSTITUTE OF REAL ESTATE BROKERS, *but mail it to* URBAN LAND INSTITUTE, *Suite 116—1200 18th Street, N.W., Washington 6, D. C. for clearance.*

In Print

Orders for publications reviewed are to be addressed to publisher in each case and not to URBAN LAND.

Published by University of California Press, Berkeley 4, California. 1960.

1. **Property Values and Race.** Luigi Laurenti. 256 pp., tables, charts, bibliography, appendices, index. $6.00.

2. **Privately Developed Interracial Housing.** Eunice and George Grier. 264 pp., tables, bibliography, index. $6.00.

3. **Housing and Minority Groups.** Edited by Nathan Glazer and Davis McEntire. 228 pp. $6.00.

4. **The Demand for Housing in Racially Mixed Areas.** Chester Rapkin and William G. Grigsby. 177 pp., tables, appendices, index. $6.00.

5. **Residence and Race.** Davis McEntire. 409 pp., bibliography, appendices, index. $6.00.

These five volumes are a series of reports prepared and published under the auspices of the Commission on Race and Housing, a private, independent group, whose purpose is to study housing problems involving minority, racial and ethnic groups.

1. **Property Values and Race** critically examines the widely held belief that non-white entrance into white neighborhoods causes a decline in property values. Utilizing basic information from thirty-nine selected neighborhoods in San Francisco, Oakland and Philadelphia, supplemented by material from other studies in Chicago, Kansas City, Detroit, and Portland; the author comes to this principal conclusion: "The entry of non-whites into previously all-white neighborhoods is much more often associated with price improvement or stability than with price weakening." No single or uniform pattern of non-white influence on property values could be found. General real estate market conditions and the long-run trend of values exert more influence.

Laurenti carefully qualifies his research by pointing out that the periods covered by his studies were characterized by an unusually strong demand for housing, particularly by non-whites, who had been making relatively large gains in personal income. A major weakness of this work is that a study carried out by one man can cover only a small number of areas. The author could only investigate a few of all the racially mixed neighborhoods. Also, the analysis was limited to neighborhoods outside the central city area. Thus, many important influences and situations were not measured.

2. **Privately Developed and Interracial Housing** studies thirty-seven of the fifty known housing developments occupied on an interracial basis in the U. S. The principal conclusion of the study is that in most cases interracial projects are financially feasible, and the turnover and vacancy rates are not substantially different from those of conventional developments. The study is enriched by the inclusion of information on projects that have failed. The study is broad in scope and is directed more to identifying problems than to answering them conclusively.

3. **Housing and Minority Groups** consists of seven studies that examine the special local forces and their interplay which affect minority housing in nine different cities. Each study provides an intensive examination of local situations and shows that local factors, such as the economy, social climate, and quality of life in the Negro community have more influence on the quality of minority group housing than broad national factors. The principal conclusion pointed out by these studies is that prejudice, economic capacity—kinds of jobs and income—and middle-class characteristics as revealed in attitudes toward education, crime, neighborhood facilities, and the like, are the dynamic factors in the minority situation. While poor housing can defeat efforts to rise in the social scale, good housing by itself is not a dynamic element in improving the general position of groups in society.

4. **The Demand for Housing in Racially Mixed Areas** examines the real estate market in racially changing areas in one large metropolitan area, Philadelphia. Although the observations made and the conclusions drawn are therefore specifically applicable only to this city, many generalizations derived from this study are also valid in other parts of the country. The characteristics of purchasers in racially mixed areas are explored, as are their buying motivations, the composition of their former neighborhoods and their attitudes toward Negroes. A detailed exploration is made into the stability of a neighborhood (including land prices and financing) which has recently been mixed. This volume ultimately concludes that the primary detriment of the racial composition of urban areas is attitudes, which, it is hoped, are becoming more flexible.

5. **Residence and Race** probes into the insidious problem of discrimination in the housing market and summarizes some of the findings of this entire investigation. This volume analyzes patterns of residential segregation along racial and ethnic lines and graphically demonstrates these distributions with maps of several large cities. Each minority group is described separately and the unique causes of its plight are thoroughly studied. The author cites many legal and extra-legal cases which demonstrate the oftimes fluctuating and disappointing role which federal, state and local governments have assumed during the past century in relation to discrimination. Despite the rather gloomy situation which now exists, progress has been made; and, Mr. McEntire's suggestions for future improvement are well-founded and worthy of consideration.

The Image of The City. Kevin Lynch. The Technology Press and Harvard University Press, Cambridge, Mass. 1960. 194 pp. $5.50, cloth; $3.50, paper.

Most people are affected emotionally, psychologically and physically by the cities in which they live; few, however, know how or why or by what they are so influenced. Mr. Lynch describes the elements in the composition of their city people most often notice, those which displease and confuse them, and those which seem to give their city order and meaning.

Three rather diverse cities are studied—vivid, historic Boston; apparently formless Jersey City; and relatively recently planned and built Los Angeles. Each city is analyzed first by a trained observer and then by those who administer the ultimate test of a city's durability—its citizens. Perceptive criticisms and comments are made about numerous facets of the three cities—their streets, transportation systems, picturesque views and buildings, to mention a few.

Boston, Jersey City and Los Angeles are critically examined from the standpoint of their "imageability." "Imageability," as defined by the author, is "that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment." Mr. Lynch suggests that this fascinating concept, "imageability," should serve as an additional means of evaluating the present city and planning for the future one.

This Land of Ours. Alice Harvey Hubbard. The Macmillan Company, 60 Fifth Ave., New York 11, N. Y. 1960. 272 pp. $4.95.

This Land of Ours presents a stirring tribute to the natural resources which have made America great and a fervent plea for their conservation.

This book documents projects undertaken by people all over the world who have been aroused by the rapid diminution of areas of natural beauty. The projects described range in scope from a petunia contest to beautify a small California town to the Community Development program undertaken jointly by the United Nations and the International Union for the Conservation of Nature and Natural Resources. The ingenious, resourceful methods employed by these dedicated citizens' groups may serve as guides for other communities interested in protecting their valuable open areas from the often damaging effects of man-made construction.

This Land of Ours, replete with fascinating stories concerning many of this country's most beloved areas of natural beauty, covers such matters as roadside beautification, special gardens and sanctuaries, community planning and recreational facilities, community improvement and educational programs, and forest and water problems. In each case, concrete examples of how these problems can be met are presented.

The author's call for the guarding of our heritage of natural beauty is one that should be heeded.

Regions, Resources, and Economic Growth. Harvey S. Perloff, Edgar S. Dunn, Jr., Eric E. Lampard, and Richard F. Muth. Published for Resources for the Future, Inc. by The Johns Hopkins Press, Baltimore 18, Md. 1960. 716 pp. $12.00.

Economic growth in the United States has varied widely among the different geographic divisions and states. Some have grown rapidly, attracting people, capital, and materials in great quantity; others have barely maintained their relative position in the nation, or have experienced a relative decline.

The distribution of population, income, natural-resource-based and other economic activities, and employment is studied in detail for the periods 1870-1950, and 1939-1954. There is a special section devoted to the analysis of regional differences in the level of per capita personal income.

This study is an excellent analytical framework providing basic information on the economic development of regions and states, which may be applied in further study of either individual geographic areas or specific industrial activities. It contains several interesting methods for the analysis of relative levels and relative changes in our economic growth. With a large collection of data tables in the Appendix, it may serve as a reference work as well as a study tool.

Motels, Hotels, Restaurants and Bars. F. W. Dodge Corporation, 119 West 40th Street, New York 18, N. Y. 1960. 327 pp. $9.75.

This volume is a collection of articles which originally appeared in the *Architectural Record.* Taking the premise that the success of motels, hotels, restaurants and bars depends, to a large extent, on good planning and design, the editors present several outstanding examples of this group of commercial buildings.

Each building type is examined separately through the use of descriptive text and photographs and plans which are expertly reproduced and artistically arranged.

Motels, Hotels, Restaurants and Bars is designed to provide architects with concrete and valuable information and examples. It will also aid his developer to gain the necessary background information to enable him to understand more thoroughly the role of the architect in the design of buildings.

New York Metropolitan Region Study. Harvard University Press, Cambridge 38, Mass.

1. **Money Metropolis** by Sidney M. Robbins and Nestor E. Terleckyj, with collaboration of Ira O. Scott, Jr. 1960. 294 pp. $5.00.

As its title indicates, **Money Metropolis** describes New York's present role as the financial hub of the nation and explores its prospects for the future. The authors give historic perspective to this study by tracing the development of the New York Metropolitan Region as a financial community and by focusing on the reasons for the concentration of these economic functions in the New York area. Early economic and political factors seemed to favor Philadelphia's emergence as the financial capital of the country; but New York's well-situated harbor made it the trading center of the United States and thence the financial center as well.

One section of the book evaluates the role of the major financial "industries"

in the overall financial community. These include commercial banking, life, health and property insurance, and securities.

Prospects for the endurance and continued growth of each of the financial institutions are examined carefully as is the future of the New York Metropolitan Region as the home of the "money-market center." It is considered unlikely that the necessarily interrelated complex of men which makes up this country's financial community will suddenly or gradually disintegrate and disperse. This disunion is unlikely but not impossible; for if the economic growth of the New York Metropolitan Region does not keep pace with that of other areas, its position could be seriously challenged.

New York Metropolitan Region Study. Harvard University Press, Cambridge 38, Mass.

2. **Freight and the Metropolis** by Benjamin Chinitz. 1960. 211 pp. $4.50.

Just as the enormous volume of foreign trade flowing into the Port of New York played an important role in making the Region the center of this country's financial community, it logically served as the basis for the growth of the area as the freight-handling capital as well. In **Freight and the Metropolis,** Mr. Chinitz relates a brief history of America's port system which at first was highly diffused and later became centralized to a large extent in the Port of New York. Since the Civil War, which was preceded by a period of booming growth, the New York Port's share of all United States foreign trade has steadily decreased. Nevertheless, the Port retains its dominant position in this country in terms of both variety and volume. The effects of freight transport on the Region's industrial development and future and the prospects for foreign trade are explored thoroughly in this important volume.

New York Metropolitan Region Study. Harvard University Press Cambridge 38, Mass.

3. **One-Tenth of a Nation** by Robert M. Lichtenberg. 1960. 326 pp. $6.75.

The title of **One-Tenth of a Nation** is derived from the fact that approximately ten percent of the jobs and residents of the United States are concentrated in the New York Metropolitan Region. This volume concerns the decline or growth in the Region of industries and services which are inextricably related to events on the national scene. The industries examined, then, are not locally-oriented but are those which compete nationally.

As is the case with all the other books in this series, historic background is provided and evaluated. The author analyzes the aspects of the Region which most tend to effect the clustering of particular industries within its boundaries. In addition, careful study is made of the impact of the "national-market" industries upon the Region and its populace and the impact of intense competition and "mix" (variety of industry) upon the industries themselves.

New York Metropolitan Region Study. Harvard University Press, Cambridge 38, Mass.

4. **Metropolis 1985** by Raymond Vernon. 1960. 252 pp. $5.00.

In **Metropolis 1985** Mr. Vernon, the director of the New York Metropolitan Region Study, synthesizes and interprets the findings of the previously published works (see In Print, URBAN LAND, January 1960). In order to lay the proper basis for valid projections, much of the information and conclusions printed in the seven other volumes is necessarily repeated in this, the final volume in the series. All aspects of the problem, which have already been analyzed, are again examined; some, briefly, others, in great detail. Mr. Vernon then draws upon the accumulated data to formulate a forecast for the Region. The author's projections are interesting and provocative; and, along with the other books in this series, should help to provide a solid foundation for planning in the New York Metropolitan Region.

Twenty Years of Public Housing. Robert Moore Fisher. Harper & Brothers, 49 East 33rd Street, New York 16, New York. 1959. 303 pp. $6.50.

Among other contributions this book makes is a lucid, laconic definition of the much maligned term, public housing. Mr. Fisher believes that a definition encompassing solely the ownership and financial aspects of public housing is often inadequate and seldom distinguishes it from private housing. Hence, his definition includes these two factors as well as the statement that "public housing can be distinguished chiefly by its statutory derivation, its relatively large scale, and its unique rules for playing the game."

As far back as 1647 there was apparent concern at municipal and state levels about substandard living quarters. Indicative of this is the fact that a team of surveyors was appointed by the City of Amsterdam " 'to condemn all improper and disorderly buildings.' " The first federal interest in this problem was manifested in 1892 when the Commissioner of Labor was instructed by Congress to make a full investigation of city slums. From these humble beginnings, the provision of public housing has grown into a multi-million dollar program entailing the demolition of old buildings, the erection of new ones, and the renovation of existing structures.

Thus, the history of and justification for public housing are related thoroughly in *Twenty Years of Public Housing.* The views of both the advocates and opponents of this program are stated in detail and as impartially as possible. For these reasons, this volume can serve as a useful, vividly written reference.

Residential Rehabilitation: Private Profits and Public Purposes. William W. Nash. Action Series in Housing and Community Development. McGraw-Hill Book Co., 330 W. 42nd Street, New York 36, New York. 1959. 272 pp. $8.00.

Mr. Nash meticulously examines a frequently neglected means for attaining the goal of an expanded American housing market—residential rehabilitation. Proper location is critical to the success of a rehabilitation project. As Mr. Nash points out, rehabilitation has been undertaken in every type of neighborhood, but each project must be treated individually. However two preliminary steps are common to all rehabilitation programs: discovery of a market opportunity and formulation of a specific project to meet demand.

Well-documented case studies of residential rehabilitation are presented in logical order according to neighborhood character and income level of prospective purchasers. The methods employed and the standards applied to the projects differ, but each program provides unique experiences to be considered in the overall evaluation of rehabilitation.

The role of local governments in a rehabilitation program is discussed at length. And, one of the author's most provocative statements concerns a dilemma faced by public agencies—". . . how to achieve a balance of expenditure for rehabilitation and new construction which will provide better dwellings for slum residents and simultaneously contribute to a permanent housing stock meeting the future needs of a healthy community."